



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,884	01/20/2004	Eric R. Schott	EQLC-P01-005	4233
28120	7590	01/16/2008	EXAMINER	
ROPES & GRAY LLP			DOAN, DUC T	
PATENT DOCKETING 39/41				
ONE INTERNATIONAL PLACE			ART UNIT	PAPER NUMBER
BOSTON, MA 02110-2624			2188	
			MAIL DATE	DELIVERY MODE
			01/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/761,884

Applicant(s)

SCHOTT, ERIC R.

Examiner

Duc T. Doan

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 8-14, 18-20 and 22-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-14, 18-20 and 22-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/29/07, 9/7/07, 10/3/07
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

Claims 1-31 have been presented for examination in this application. Claims 5-7, 15-17, and 21 have been canceled. As the result, claims 1-4, 14, 18-20, and 22-31 are pending in this application.

Claims 1-4, 8-14, 18-20, and 22-31 are rejected

The applicant's remarks/response filed 11/19/2007 have been considered with the results as follows,

Examiner withdraws previous rejections and applying new rejections with new reference(s) found.

Specification Objections

Specification's page 1 lines 7-11, claims priority to the US provisional Application No 60/441810. However, the previous office action dated 3/14/2007, section priority, pointed out that there is no adequate support or enable in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this applications. Thus the claims in the instant application are not entitled to the benefit of the prior US provisional 60/441810.

Correction to the specification is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

A person shall be entitled to a patent unless -

(a) the invention was known or used by other's in this country or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-4, 8-14, 18-20, and 22-31 are rejected under 35 U.S.C. 102 (e) as being anticipated by Dimitri (US 6839802)

As in claim 1, Dimitri discloses a system for providing differentiated classes of storage, comprising a storage device having a plurality of storage locations and a logical block name space for organizing logical block names of the storage locations (Fig 3, storage device, 20a to 20m, logical block name space with LBA as shown in Fig 1, column 1 lines 9-42), a performance process for determining a level of performance for the plurality of storage locations (Fig 4, logic for determine level of performance for storage locations) and partitioning the plurality of storage locations into a plurality of regions as determined by their different levels of performance (Fig 4, partition into zones), and a mapping process for mapping the partitioned regions of the storage locations and aggregating the logical block names of the storage locations in the partitioned regions having an identical level of performance to a selected section of the logical block name space (Fig 4, mapping partitioned regions/zones to groups/sections of logical blocks having identical performance level, aggregating logical block

names LBAs to RAID stripes/sections, column 8 lines 31-43) , thereby providing differentiated classes of storage to one or more clients accessing the system (Fig 4, column 8 lines 31-43, thereby providing different classes of storage to users, column 9 line 62 to column 10 line 9).

As in claim 2, Dimitri further discloses the performance process separates the plurality of storage locations into a plurality of categories as determined by their different levels of performance (Fig 4).

As in claim 3, Dimitri further discloses the different levels of performance represent different RAID levels of performance (Fig 3 and 4, column 8 lines 31-43).

As in claim 4, Dimitri further discloses the aggregated logical block names correspond to a common RAID level (Fig 3 and 4, column 8 lines 31-43).

As in claim 8, Dimitri further discloses a process for employing the storage to provide a file system service (column 9 line 62 to column 10 line 9).

As in claim 9, Dimitri further discloses a process employing the storage to provide a volume (column 9 line 62 to column 10 line 9, provide volumes in disks to store computer data for example data in files).

As in claim 10, Dimitri further discloses the mapping process creates multiple storage volumes at a selected level of performance (column 9 line 62 to column 10 line 9, provide volumes in disks to store computer data for example data in files. Fig 3 and 4, column 8 lines 31-43 grouping to volumes at a selected level of performance).

As in claim 11, Dimitri discloses a process for providing differentiated classes of storage, comprising the steps of providing a storage device having a plurality of storage locations and a logical block name space for organizing logical block names of the storage locations (Fig 4),

determining a level of performance for the plurality of storage locations (level of performance for storage locations are determined with values shown in Fig 4), partitioning the plurality of storage locations into a plurality of regions as determined by their different levels of performance (Fig 4, partitioning into zones), mapping partitioned regions of the storage locations, and aggregating the logical block names of the storage locations in the partitioned regions having an identical level of performance to a selected section of the logical block name space (Fig 4, mapping partitioned regions/zones to groups/sections of logical blocks having identical performance level, aggregating logical block names LBAs to RAID stripes/sections, column 8 lines 31-43), thereby providing differentiated classes of storage to one or more clients accessing the system (Fig 4, column 8 lines 31-43, thereby providing different classes of storage to users, column 9 line 62 to column 10 line 9).

Claim 12 is rejected based on the same reasons as of claim 2.

Claim 13 is rejected based on the same reasons as of claim 3.

Claim 14 is rejected based on the same reasons as of claim 4.

Claim 18 is rejected based on the same reasons as of claim 10.

As in claim 19, Dimitri discloses a system for providing differentiated classes of storage, comprising a storage device having a plurality of storage locations, a logical block name space for organizing logical block names of the storage locations (Fig 3, storage device, 20a to 20m, logical block name space with LBA as shown in Fig 1, column 1 lines 9-42), and performance parameters of the storage locations that vary across the storage device (different zones across the storage device having different performance parameters), and a partitioning process for partitioning the storage locations into regions (partitions into zones) and aggregating

the logical block names of the storage locations in the partitioned regions having an identical level or performance to a selected section of the logical block name space (Fig 4, mapping partitioned regions/zones to groups/sections of logical blocks having identical performance level, aggregating logical block names LBAs to RAID stripes/sections, column 8 lines 31-43), thereby providing differentiated classes of storage to one or more clients accessing the system (Fig 4, column 8 lines 31-43, thereby providing different classes of storage to users, column 9 line 62 to column 10 line 9).

As in claim 20, Dimitri further discloses a system according to claim 19, wherein the partitioning process selects a fixed set of partitions as a function of a selected configuration of system components (Fig 3 selecting zones as a function of a selected configuration of system's files column 6 lines 7 to 26).

As in claim 22, Dimitri further discloses a level of performance includes a data access time, or a reliability of a storage location, or a combination thereof (Fig 3 and 4, zones with different data accessing time, storage locations with RAID providing different level of performance/reliability).

As in claim 23, Dimitri further discloses the storage device is a single storage disk.

As in claims 24 Dimitri further discloses the mapping process performs mapping and aggregating when the storage system is designed (column 9 lines 62 to column 10 line 9, storage system is designed to map/store database applications' files to outer zones of disks)

As in claim 25, Dimitri further discloses the mapping process performs mapping and aggregating during operation of the storage device (column 9 lines 10-15, migrating more frequently accessed files to outer zones of disks).

As in claim 26, Dimitri further discloses a performance measurement system for scanning storage locations of the storage device and determine the level of performance for the storage (Dimitri's Fig 4, scanning storage locations across the disk surface and measure the performance levels as shown in Fig 4).

As in claim 27, Dimitri further discloses the performance measurement system performs experimental read and write operations and determines the level of performance from experimental data collected in the read and write operations (Dimitri discloses the logic to measure performance levels/ utilization factor based on number of read and write operations to accessing files, collected during a measured time period; Based on the history of the this collected information, files are categorized accordingly, see Dimitri's column 6 lines 7-10).

Claim 28 is rejected based on the same reasons as of claim 22.

Claim 29 is rejected based on the same reasons as of claim 27.

Claim 30 is rejected based on the same reasons as of claim 24.

Claim 31 is rejected based on the same reasons as of claim 25.

Response to Arguments

The applicant's remarks were fully considered with the results that follow. Examiner withdraws previous rejections and applying new rejections with new reference(s) found.

Application/Control Number:
10/761,884
Art Unit: 2188

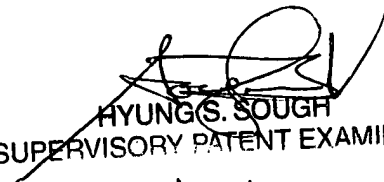
Page 8

Conclusion

When responding to the office action, Applicant is advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc T. Doan whose telephone number is 571-272-4171. The examiner can normally be reached on M-F 8:00 AM 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S. Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


HYUNG S. SOUGH
SUPERVISORY PATENT EXAMINER
6/10/08